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claims

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CLAIMS

1. A method for efficiently preparing a large number of sample coatings comprising the steps of:

- 5 (a) forming a series of sample receptacles or wells by providing a flexible substrate and an overlying apertured sheet with the apertured sheet in tight sealing engagement with the substrate;
- (b) applying different samples of material in liquid form into said receptacles;
- (c) placing said flexible substrates with said sample receptacles thereon in a centrifuge;
- 10 (d) activating said centrifuge with said receptacle mounted therein to flatten out the sample material in said receptacles, with the centrifugal force acting perpendicular to the bottom of the receptacles;
- (e) drying said samples while they are within the centrifuge; and
- (f) removing the apertured plate to leave the samples exposed on said
- 15 substrate.

2. A method as defined in claim 1 wherein said applying step involves the application of various adhesive compositions into said receptacles or wells.

20 3. A method as defined in claim 1 wherein multilayer samples are formed by repeating steps (b) through (e) prior to step (f).

4. A method as defined in claim 1 wherein an array of at least four wells are formed.

5. A method as defined in claim 1 wherein hot air is applied to the samples during

25 centrifugation.

6. A method as defined in claim 1 wherein said substrate is formed of paper.

7. A method of forming a test coating comprising the steps of:

30 forming a receptacle for receiving a material sample, said receptacle having a flat bottom and enclosing sides;

depositing a fluid material sample in said receptacle;

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mounting said receptacle in a centrifuge with the outward centrifugal force being perpendicular to the bottom of said receptacle;

activating said centrifuge to flatten the material in the receptacle; and

drying said material while the sample is being rotated and flattened by the centrifugal action.

8. A method for efficiently preparing a large number of sample castings comprising the steps of:

forming a series of sample receptacles by providing a substrate and an overlying apertured sheet with the apertured sheet in tight sealing engagement with the substrate;

applying different samples of material in liquid form into said receptacles;

drying said samples; and

removing said apertured sheet to leave said material samples on said substrate.

9. A method as defined in claim 8 including the step of applying force to said samples perpendicular to the bottom of said receptacles to flatten out said samples.

10. A method of testing coating materials, comprising the steps of:

providing an array of coating wells, each well being configured for receiving a coating material having a known composition;

placing a coating material having a known composition in each coating well, varying the composition so as to provide a plurality of coating materials having different compositions in a plurality of coating wells;

correlating the composition of the coatings deposited in each of the plurality of coating wells with the position of the coating well in the array, whereby a specific composition is associated with each coating well position in the array;

placing said coating wells with said compositions into a centrifuge, and activating said centrifuge;

drying said coating materials; and

testing the resultant coatings.

11. The method of claim 10 including providing wells in the form of a flexible substitute and a flexible overlying apertured sheet.

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12. The method of claim 10 including the step of heating said coating materials while said centrifuge is activated.

13. A method of analyzing coating materials for performance of the coating with regard to a property of a coating, comprising:

5 providing an array of coating wells, each well being configured for receiving a coating material having a known parameter; said array of coating wells comprising a substrate and an overlying apertured sheet;

10 placing a coating material having the known parameter in each coating well, varying the parameter so as to provide a plurality of coating materials having different parameter values in a plurality of coating wells;

correlating the value of the parameter for the coatings deposited in each of the plurality of coating wells with the position of the coating well in the array, whereby a parameter value is associated with each coating well position in the array;

drying said coating samples; and

15 testing the coatings in the array to analyze the relationship between the position in the array and performance with regard to the property of the coating material; whereby the value of the parameter can be correlated to the performance of the coating with regard to the property of the coating.

14. The method of claim 13, further comprising the steps of:

20 providing a coating well apparatus having at least a substrate part and a well wall part which can be separated;

separating the well wall part from the substrate part after drying, whereby the coating material array is carried by the substrate alone after separation.

25 15. The method of claim 13, wherein the well depth and volume is substantially greater than that of the coating volume.

16. A method of analyzing coating materials for performance of the coating with regard to a property of a coating, comprising:

providing an array of coating wells, each well being configured for receiving a coating material having a known parameter;

30 placing a coating material having the known parameter in each coating well, varying the parameter so as to provide a plurality of coating materials having different parameter values in a plurality of coating wells;

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correlating the value of the parameter for the coatings deposited in each of the plurality of coating wells with the position of the coating well in the array, whereby a parameter value is associated with each coating well position in the array;

5 applying a centrifugal force to the array of coating wells to level the coating material in the coating wells;

curing said coating samples under said coating leveling force; and

testing the coatings in the array to analyze the relationship between the position in the array and performance with regard to the property of the coating material;

10 whereby the value of the parameter can be correlated to the performance of the coating with regard to the property of the coating.

17. The method of claim 16, further comprising the steps of:

providing a coating well apparatus having at least a substrate part and a well wall part which can be separated;

15 separating the well wall part from the substrate part after application of the leveling force, whereby the coating material array is carried by the substrate alone after separation.

18. The method of claim 10, further comprising the steps of:

curving the said array of coating wells to substantially match the curvature of the curvilinear path of the array during centrifuging.